

NOSB NATIONAL LIST FILE CHECKLIST

PROCESSING

MATERIAL NAME: #20 Potassium Hydroxide



NOSB Database Form



References



MSDS (or equivalent)



FASP (FDA)



TAP Reviews from: Joe Montecalvo, Rich
Theuer

NOSB/NATIONAL LIST COMMENT FORM PROCESSING

Material Name: #20 Potassium Hydroxide

Please use this page to write down comments, questions, and your anticipated vote(s).

COMMENTS/QUESTIONS:

1. In my opinion, this material is:
_____ Synthetic _____ Non-synthetic.

2. Should this material be allowed in an "organic food" (95% or higher organic ingredients)? _____ Yes _____ No
(IF NO, PROCEED TO QUESTION 3.)

3. Should this substance be allowed in a "food made with organic ingredients" (50% or higher organic ingredients)? _____ Yes _____ No

TAP REVIEWER COMMENT FORM for USDA/NOSB

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Complete both sides of page. Attach additional sheets if you wish.

This file is due back to us by: August 8

Name of Material:

Potassium Hydroxide

Reviewer Name:

Dr. Joe Montecalvo

Is this substance Synthetic or non-synthetic? Explain (if appropriate)

Synthetic

If synthetic, how is the material made? (please answer here if our database form is blank)

This material should be added to the National List as:

☒ Synthetic Allowed

☐ Prohibited Natural

or, ☐ Non-synthetic (Allowed as an ingredient in organic food)

☐ Non-synthetic (Allowed as a processing aid for organic food)

or, ☐ this material should not be on the National List

Are there any use restrictions or limitations that should be placed on this material on the National List? only as specified

Please comment on the accuracy of the information in the file: good

Any additional comments? (attachments welcomed)

none

Do you have a commercial interest in this material? ☐ Yes; ☒ No

Signature

[Signature]

Date

7/30/95

Please address the 7 criteria in the Organic Foods Production Act:
(comment in those areas you feel are applicable)

- (1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;

Moderate.

- (2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment;

little

- (3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance;

little

- (4) the effect of the substance on human health;

Extremely CORROSIVE, EA ingestion CAN CAUSE hematemesis, collapse,
Stricture of Esophagus, Violent pain in throat AND Epigastrium

- (5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock;

None known.

- (6) the alternatives to using the substance in terms of practices or other available materials; and

none.

- (7) its compatibility with a system of sustainable agriculture.

only for specified uses.

TAP REVIEWER COMMENT FORM for USDA/NOSB

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Complete both sides of page. Attach additional sheets if you wish.

This file is due back to us by: August 8

Name of Material: Potassium Hydroxide (KOH)

Reviewer Name: R. Thuermer

Is this substance Synthetic or non-synthetic? Explain (if appropriate)

SYNTHETIC

If synthetic, how is the material made? (please answer here if our database form is blank)

This material should be added to the National List as:

☒ Synthetic Allowed ☐ Prohibited Natural

or, ☐ Non-synthetic (Allowed as an ingredient in organic food)

☐ Non-synthetic (Allowed as a processing aid for organic food)

or, ☐ this material should not be on the National List

Are there any use restrictions or limitations that should be placed on this material on the National List?

PROHIBIT USE FOR LYE PEELING

Please comment on the accuracy of the information in the file:

Any additional comments? (attachments welcomed)

EXACTLY THE SAME AS SODIUM HYDROXIDE
EXCEPT "SODIUM-FREE"

Do you have a commercial interest in this material? ☐ Yes; ☒ No

Signature R. Thuermer Date 8/28/95

Please address the 7 criteria in the Organic Foods Production Act:
(comment in those areas you feel are applicable)

- (1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;

N/A

- (2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment;

OK POTASSIUM IS ESSENTIAL NUTRIENT FOR PLANTS

- (3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance;

DISPOSAL OF SPENT LYE CAN BE DISASTROUS ENVIRONMENTALLY

- (4) the effect of the substance on human health;

HAZARDOUS SUBSTANCE - CAUSTIC
IN FOOD USES INNOCUOUS

- (5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock;

SPENT LYE FROM PEELING HAS MAJOR ADVERSE IMPACT

- (6) the alternatives to using the substance in terms of practices or other available materials; and

SODIUM HYDROXIDE - BUT KOH IS SODIUM FREE

- (7) its compatibility with a system of sustainable agriculture.

OK IF NOT USED FOR PEELING

Identification

Common Name	Potassium hydroxide	Chemical Name
Other Names	Caustic Potash	
Code #: CAS		Code #: Other
N. L. Category	Synthetic Allowed	MSDS <input checked="" type="radio"/> yes <input type="radio"/> no

Chemistry

Family	
Composition	KOH
Properties	White or nearly white pellets, flakes, sticks, fused masses, or other forms. Readily absorbs carbon dioxide and moisture from air, and deliquesces. Very soluble in boiling alcohol.
How Made	Produced by electrolysis of potassium chloride in a manner very similar to production of Sodium Hydroxide. Brine of potassium chloride is fed into mercury cells which have a positive and negative terminal. The potassium forms and amalgam with mercury at the negative terminal which is then mixed with water to form potassium hydroxide and hydrogen. The remaining mercury is then recycled to the cells.

Use/Action

Type of Use	Processing
Specific Use(s)	pH control agent (alkali)
Action	
Combinations	

Status

OFPA
N. L. Restriction
EPA, FDA, etc
Directions
Safety Guidelines
State Differences
Historical status
International status

OEPA Criteria

2119(m)1: chemical interactions Not Applicable

2119(m)2: toxicity & persistence Not Applicable

2119(m)3: manufacture & disposal consequences

Environmental awareness is a prime concern in all KOH plants, because both mercury and chlorine are extremely toxic. Safety precautions required in KOH plants are well-documented in operating manuals. Discharges of waste effluents containing mercury are strictly forbidden.

2119(m)4: effect on human health

2119(m)5: agroecosystem biology Not Applicable

2119(m)6: alternatives to substance

Sodium hydroxide.

2119(m)7: Is it compatible?

References

Kirk-Othmer Encyclopedia of Chemical Technology.

MSDS for POTASSIUM HYDROXIDE

Page 1

1 - PRODUCT IDENTIFICATION

PRODUCT NAME: POTASSIUM HYDROXIDE

FORMULA: KOH

FORMULA WT: 56.11

CAS NO.: 01310-58-3

NIOSH/RTECS NO.: TT2100000

COMMON SYNONYMS: POTASSIUM HYDRATE

PRODUCT CODES: 3141,3150,3146,3147,5342,3142,5085,3140

EFFECTIVE: 01/22/87

REVISION #03

PRECAUTIONARY LABELLING

BAKER SAF-T-DATA(TM) SYSTEM

HEALTH - 3 SEVERE (POISON)

FLAMMABILITY - 0 NONE

REACTIVITY - 2 MODERATE

CONTACT - 4 EXTREME (CORROSIVE)

HAZARD RATINGS ARE 0 TO 4 (0 = NO HAZARD; 4 = EXTREME HAZARD).

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

PRECAUTIONARY LABEL STATEMENTS

POISON DANGER

CAUSES SEVERE BURNS

MAY BE FATAL IF SWALLOWED

DO NOT GET IN EYES, ON SKIN, ON CLOTHING. AVOID SPATTERING BY SLOWLY ADDING TO SOLUTION.

AVOID BREATHING DUST. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

SAF-T-DATA(TM) STORAGE COLOR CODE: WHITE STRIPE (STORE SEPARATELY)

2 - HAZARDOUS COMPONENTS

COMPONENT	%	CAS NO.
POTASSIUM HYDROXIDE	85-100	1310-58-3

3 - PHYSICAL DATA

BOILING POINT: 1320 C (2408 F) VAPOR PRESSURE(MM HG): N/A

MELTING POINT: 360 C (680 F) VAPOR DENSITY(AIR=1): N/A

SPECIFIC GRAVITY: 2.04 (H2O=1) EVAPORATION RATE: N/A (BUTYL ACETATE=1)

SOLUBILITY(H2O): APPRECIABLE (MORE THAN 10 %) % VOLATILES BY VOLUME: 0

APPEARANCE & ODOR: WHITE OR SLIGHTLY YELLOW PELLETS; NO ODOR.

4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP) N/A NFPA 704M RATING: 3-0-1
FLAMMABLE LIMITS: UPPER - N/A % LOWER - N/A %

FIRE EXTINGUISHING MEDIA

USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

UNUSUAL FIRE & EXPLOSION HAZARDS

A VIOLENT EXOTHERMIC REACTION OCCURS WITH WATER. SUFFICIENT HEAT
MAY BE PRODUCED TO IGNITE COMBUSTIBLE MATERIALS.

REACTS WITH MOST METALS TO PRODUCE HYDROGEN GAS, WHICH CAN FORM AN EXPLOSIVE
MIXTURE WITH AIR.

TOXIC GASES PRODUCED HYDROGEN GAS

5 - HEALTH HAZARD DATA

TLV LISTED DENOTES CEILING LIMIT. _____

THRESHOLD LIMIT VALUE (TLV/TWA): 2 MG/M3 (PPM)

TOXICITY: LD50 (ORAL-RAT)(MG/KG) - 365

CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

EFFECTS OF OVEREXPOSURE

CONTACT WITH SKIN OR EYES MAY CAUSE SEVERE IRRITATION OR BURNS.
EXCESSIVE INHALATION OF DUST IS IRRITATING AND MAY BE SEVERELY DAMAGING TO
RESPIRATORY PASSAGES AND/OR LUNGS. INGESTION MAY CAUSE SEVERE BURNING OF
MOUTH AND STOMACH.

TARGET ORGANS: EYES, SKIN

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE IDENTIFIED

ROUTES OF ENTRY: EYE CONTACT, SKIN CONTACT, INHALATION, INGESTION

EMERGENCY AND FIRST AID PROCEDURES: CALL A PHYSICIAN.

IF SWALLOWED, DO NOT INDUCE VOMITING; IF CONSCIOUS, GIVE LARGE AMOUNTS OF
WATER. FOLLOW WITH DILUTED VINEGAR, FRUIT JUICE OR WHITES OF EGGS, BEATEN WITH
WATER. IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH PLENTY OF WATER FOR AT
LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.
WASH CLOTHING BEFORE RE-USE.

6 - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: MOISTURE, HEAT

INCOMPATIBLES: WATER, STRONG ACIDS, ORGANIC MATERIALS, ZINC, ALUMINUM

DECOMPOSITION PRODUCTS: HYDROGEN

7 - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE

WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING.
WITH CLEAN SHOVEL, CAREFULLY PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND
COVER; REMOVE FROM AREA. FLUSH SPILL AREA WITH WATER.

J. T. BAKER NEUTRACIT-2(R) CAUSTIC NEUTRALIZER IS RECOMMENDED FOR SPILLS OF THIS
PRODUCT.

DISPOSAL PROCEDURE: DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE,
AND LOCAL ENVIRONMENTAL REGULATIONS.

EPA HAZARDOUS WASTE NUMBER: D002, D003 (CORROSIVE, REACTIVE WASTE)

8 - PROTECTIVE EQUIPMENT

VENTILATION: USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET
TLV REQUIREMENTS.

RESPIRATORY PROTECTION: A RESPIRATOR WITH DUST/MIST FILTER IS RECOMMENDED.

IF AIRBORNE CONCENTRATION EXCEEDS TLV, A SELF-CONTAINED BREATHING APPARATUS IS
ADVISED.

EYE/SKIN PROTECTION: SAFETY GOGGLES, UNIFORM, APRON, NEOPRENE GLOVES ARE
RECOMMENDED.

9 - STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA(TM) STORAGE COLOR CODE: WHITE STRIPE (STORE SEPARATELY)

SPECIAL PRECAUTIONS

KEEP CONTAINER TIGHTLY CLOSED. STORE IN CORROSION-PROOF AREA.

10 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME POTASSIUM HYDROXIDE, DRY SOLID

HAZARD CLASS CORROSIVE MATERIAL (SOLID)

UN/NA UN1813

LABELS CORROSIVE

REPORTABLE QUANTITY 1000 LBS.

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME POTASSIUM HYDROXIDE, DRY SOLID

HAZARD CLASS 8

UN/NA UN1813

LABELS CORROSIVE

